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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,405	07/24/2006	Joerg Habetha	US040475	1517

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EXAMINER

AJIBADE AKONAI, OLUMIDE

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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08/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,405	Applicant(s) HABETHA, JOERG	
	Examiner OLUMIDE T. AJIBADE AKONAI	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 52-54 and 56-58 is/are rejected.
- 7) ☒ Claim(s) 4-51, 55 and 59-61 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-61 are objected to because of the following informalities: The numbers in parenthesis in the claims should be deleted. Appropriate correction is required.

Claims 60 and 61 would be allowable if the numbers in the parenthesis are deleted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-3, 52-54, and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Salokannel et al 7,245,947 (hereinafter Salokannel)** in view of **Miklos et al 20030016732 (hereinafter Miklos)**.

Regarding **claim 1**, Salokannel discloses a method of decentralized medium access control in a communications network including at least one wireless device

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(301), comprising the steps of: dividing time into a sequence of at least one superframe (100) (see fig. 5, col. 7, lines 58-62) comprising at least one beacon period (301) (see fig. 5, col. 7, lines 63-64) and at least one data transmission period (102) (CFP for data transmissions, see fig. 5, col. 7, lines 63-65, col. 8, lines 9-12).

Salokannel does not specifically disclose the superframe comprising a dynamic beacon period, said dynamic beacon period (301) having a predetermined maximum length and including a variable plurality of beacon slots (204); beaconing by transmission of a beacon frame (600) in a unique one of said plurality of beacon slots (204) by every device (401) in an awake state, said beacon frame (600) including information (604); and grouping said plurality of beacon slots (204) into at least one contiguous dynamic beacon period (301).

In the same field of endeavor, Miklos discloses a dynamic beacon period (see p.3, [0042]-[0043]), said dynamic beacon period (301) having a predetermined maximum length (dynamic beacon period, wherein the beacon period can be increased or decreased, but the max length is T_{BCN} , see p.2, [0021], [0029], p.3, [0042]-[0043]) and including a variable plurality of beacon slots (204) (dynamic beacon period, wherein the beacon period is increased or decreased, indicating a variable amount of beacon slots, see p.3, [0042]-[0043]); beaconing by transmission of a beacon frame (600) in a unique one of said plurality of beacon slots (204) by every device (401) in an awake state (transmitting beacon messages, see p.2, [0029]), said beacon frame (600) including information (604) (see p.2, [0020], [0029]); and grouping said plurality of beacon slots (204) into at least one contiguous dynamic beacon period (301) (dynamic

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beacon period, wherein the beacon period is increased or decreased, indicating a variable amount of contiguous beacon slots are used for the dynamic beacon period, see p.3, [0042]-[0044]).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Miklos, by having a superframe comprising dynamic beacon period, into the system of Salokannel for the benefit of saving power and reducing interference among active wireless devices.

Regarding **claim 2** as applied to claim 1, Salokannel as modified by Miklos discloses the claimed limitation. Miklos further discloses the step of said dynamic beacon period 301 dynamically expanding or shrinking in length by a multiple $N \geq 1$ of beacon slots (204) within said predetermined maximum size in accordance with the number of occupied beacon slots (dynamic beacon period, wherein the beacon period is increased or decreased, indicating a variable amount of beacon slots is added or removed from the number of beacon slots for the beacon period, see p.3, [0042]-[0043]).

Regarding **claim 3** as applied to claim 2, Salokannel as modified by Miklos discloses the claimed limitation. Miklos further discloses the steps of: receiving by each beaconing device (401) beacons (600) transmitted by other devices (401) within a radio range of the beaconing device (401) (see p.2, [0020], [0029]); and each beaconing device (401) autonomously determining the length of said at least one contiguous dynamic beacon period (301) in which it is beaconing based on the received beacons (600) from other devices (401) and information (604) included in said received beacons

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(determining dynamic beacon period based on beacon information, see p.2, [0020], [0029], p.3, [0042]-[0044]).

Regarding **claims 52, 53, and 54** as applied to claims 1, 2, and 3 respectively, Salokannel as modified by Miklos discloses the claimed limitation. Miklos further discloses the step of a device (401) announcing in its beacon (600) the length of the dynamic beacon period (703) (753) based on beacons (600) received from other devices and information (604) included in said received beacons (600) (see p.2, [0020], [0029], p.3, [0042]-[0044]).

Regarding **claims 56, 57, and 58** as applied to claims 1, 2, and 3 respectively, Salokannel as modified by Miklos discloses the claimed limitation. Miklos further discloses a communications network (400) (see fig. 1, p.1, [0013]) comprising a plurality of devices (401) (see fig. 1, p.1, [0013]) that include dynamic beacon periods (301) for transmission of their beacon frames (600) by performing the decentralized medium access control method of claims, 1, 2, and 3 (see p.3, [0042]-[0044]).

Allowable Subject Matter

4. Claims 4-51, 55, and 59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vaisanen et al 7,333,460 discloses adaptive beacon interval in WLAN.

Ho 20050174953 discloses beacon coordination and medium access.

Chen et al 20040253996 discloses a method and system for power-saving in a wireless local area network.

Allen et al 6,671,525 discloses beacon assisted hybrid asynchronous wireless communication protocol.

Knauerhase et al 20030163579 discloses dynamically configurable beacon intervals for wireless LAN access points.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617